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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/053,111	01/17/2002	Kevin E. Brehmer	M-12279 US	1813
36257 7590 01/10/2007 PARSONS HSUE & DE RUNTZ LLP 595 MARKET STREET SUITE 1900 SAN FRANCISCO, CA 94105			EXAMINER QUIETT, CARRAMAH J	
			ART UNIT 2622	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE			MAIL DATE	
3 MONTHS			01/10/2007	
			DELIVERY MODE PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/053,111	<b>Applicant(s)</b> BREHMER ET AL.	
	<b>Examiner</b> Carramah J. Quiett	<b>Art Unit</b> 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 15 November 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6, 8, 9 and 13-26 is/are pending in the application.
- 4a) Of the above claim(s) 6, 8, 9, 13-23 and 26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 24 and 25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/15/2006 entered.

### ***Response to Amendment***

2. The amendment(s), filed on 11/15/2006, have been entered and made of record. Claims 5, 7, and 10-12 have been canceled. Claims 1-4, 6, 8-9, 13-26 are pending. However, claims 6,8,9,13-23 and 26 are withdrawn.

3. Although claim 5 has been canceled, Applicant has not appropriately amended the claims that were dependent on claim 5 – please see withdrawn claims 6, 8, and 9.

### ***Response to Arguments***

4. Applicant's arguments with respect to claims 1-4 and 24-25 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Objections***

5. Claim 1 is objected to because of the following informalities: Claim 1 has been amended by Applicant to recite the following inter alia, "...clamping, by a clamp circuit, *at least one signal selected from and the sampled signals* in response to a detecting of at least one over-saturation condition..." Is the Applicant trying to claim, "...*at least one signal selected from the sampled signals...*"? Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 1-3** are rejected under 35 U.S.C. 103(a) as being unpatentable over Fossum et al. (#5,841,126) in view of Nitta et al. (#7,081,921).

As for **claim 1**, Fossum discloses a method for image sensing (second embodiment) comprising the acts of:

producing, from a photo detector, a plurality of detected electronic signals responsive to an optical image (col. 7, lines 44-64).

amplifying, with a column buffer amplifier, signals selected from the detected electronic signals to produce a plurality of amplified signals (col. 7, lines 44-53);

sampling, with a correlated double sampler, signals selected from the amplified signals to produce a plurality of sampled signals (col. 8, lines 27-38); and

clamping, by a clamp circuit, at least one signal selected from the sampled signals (col. 6, line 38 – col. 7, line 37; col. 8, lines 27-44).

However, Fossum does not expressly teach clamping, by a clamp circuit, at least one signal selected from the sampled signals in response to a detecting of at least one over-saturation condition; whereby image inversion is at least partially abated.

In a similar field of endeavor, Nitta teaches clamping, by a clamp circuit, at least one signal selected from *and* the sampled signals in response to a detecting of at least one over-saturation condition; whereby image inversion is at least partially abated (col. 5, lines 3-29). In light of the teaching of Nitta, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Fossum detecting of at least one over-saturation condition; whereby image inversion is at least partially abated in order to provide low power consumption (Nitta, col. 2, lines 10-12).

For **claim 2**, Fossum discloses the method wherein the photo detector comprises a photo diode (inherently, col. 5, lines 28-40; col. 8, lines 27-28).

For **claim 3**, Fossum discloses the method wherein the photo detector comprises a photo gate (col. 7, lines 44-64).

8. **Claim 4** is rejected under 35 U.S.C. 103(a) as being unpatentable over Fossum et al. (#5,841,126) in view of Nitta et al. (#7,081,921) as applied to claim 1 above, and further in view of Koyama et al. (#5,786,713).

For **claim 4**, Fossum, as modified by Nitta teaches the method with a clamp circuit (Fossum, col. 7, lines 44-53). However, Fossum in view of Nitta does not expressly teach the method wherein the clamp circuit is implemented in a technology selected from a list consisting of N-well CMOS process technology and of P-well CMOS process technology. In a similar field of endeavor, Koyama teaches a method wherein the clamp circuit is implemented in a technology selected from a list consisting of N-well CMOS process technology and of P-well CMOS process technology (fig. 37; col. 20, lines 41-47). In light of the teaching of Koyama, it

would have been obvious to one of ordinary skill in the art at the time the invention was made to implement Fossum's clamp circuit in a technology selected from a list consisting of N-well CMOS process technology and of P-well CMOS process technology in order to control the integration the imaging device (Koyama, col. 20, lines 41-62).

9. **Claims 24-25** are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsang et al. (#5,900,623) in view of Applicant Admitted Prior Art (AAPA).

For **claim 24**, Tsang teaches that in an image sensor that correlates a first sample (first readout mode) of a first signal during a first interval of a photo detector and a second sample (second readout mode) of the first signal during a later interval to produce a luminance signal (photo current,  $I_d$  – col. 7, lines 28-67), a method for abating (reducing) an error (blooming) in the luminance signal due to excessively rapid slewing of the first signal during the first interval wherein the improvement (col. 9, line 66 – col. 10, line 24; col. 13, lines 43-54) comprises:

detecting that the first signal is slewing excessively rapidly during the first interval (col. 10, lines 5-38); and

limiting the value of the first sample (col. 10, lines 18-24);

whereby the image sensor produces an output of improved accuracy (col. 10, lines 31-35).

In a similar field of endeavor, AAPA teaches that in an image sensor that correlates a first sample of a first signal during a first interval after reset of a photo detector and a second sample of the first signal during a later interval in the same sampling cycle as the first interval to produce a luminance signal, a method for abating an error in the luminance signal due to excessively

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rapid slewing of the first signal during the first interval. Please note that this limitation of claim 24, which is the preamble, has been written in a Jepson format. The MPEP states that, "Drafting a claim in Jepson format...is taken as an implied admission that the subject matter of the preamble is the prior art work of another" (MPEP 2129 [R-3] III). In light of the teaching of AAPA, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Tsang that correlates a first sample of a first signal during a first interval after reset of a photo detector and a second sample of the first signal during a later interval in the same sampling cycle as the first interval to produce a luminance signal to improve the quality of the image.

For **claim 25**, Tsang, as modified by AAPA, teaches the method wherein: the error (blooming) is an image inversion due to over-saturation (col. 10, lines 11-24).

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carramah J. Quiett whose telephone number is (571) 272-7316. The examiner can normally be reached on 8:00-5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, NgocYen Vu can be reached on (571) 272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CJQ

January 8, 2007



NGOC-YEN VU  
SUPERVISORY PATENT EXAMINER